

Compounders of the COVID crisis: the “perfect storm”

Barry A. Franklin, PhD

Preventive Cardiology and Cardiac Rehabilitation, Beaumont Health, and Department of Internal Medicine, Oakland University William Beaumont School of Medicine, Royal Oak, Michigan

ABSTRACT

Cultural and societal factors have placed some demographic, racial, and ethnic groups at increased risk of contracting and dying from coronavirus disease (COVID-19). This commentary addresses these population disparities and other potential modulators that negatively impact associated health outcomes in the US population, with specific reference to the need for greater self-responsibility.

KEYWORDS Chronic disease; COVID-19; preventive medicine; risk factors; self-responsibility

The lingering coronavirus disease (COVID-19) pandemic has been particularly devastating in the US. Numerous reasons have been offered to explain the disproportionate impact on some population subsets. These include the social determinants of health: personal lifestyle choices, income and wealth disparities, inequalities in health care access and utilization, occupational vulnerability, transportation transmission, and multigenerational or multifamily housing.¹ After reviewing these population disparities, this commentary discusses the contribution of governmental actions and misinformation and places the discussion in the context of US health care before the pandemic. There is a need for greater self-responsibility in combating COVID-19 infection and a key exacerbator of its consequences, underlying chronic disease.

POPULATION DISPARITIES

More than 80% of all COVID deaths have been in adults ≥ 65 years, almost 5 times their representation within the overall population. After adjusting for age, Hispanic, Black, and Native Americans experienced a disproportionately higher percentage of the COVID mortality burden relative to their percent of the US population. African Americans diagnosed with COVID were nearly 3 times more likely to be hospitalized than their white counterparts.² In Michigan, where African Americans comprise 14% of the population, they represent 33% of all cases and 41% of the deaths.³

Disparities in infectious disease contraction and outcomes may be partially attributed to policies and practices that have

disadvantaged Black, Hispanic, and Native American communities. Traditionally, these population subsets have located in densely populated urban areas, making social distancing difficult if not impossible. Oftentimes their jobs require face-to-face interactions with the general public. Particularly afflicted cohorts disproportionately use public transportation, which is associated with higher COVID contraction rates.¹ Additionally, the aforementioned demographic groups, including low-income and older Americans, confronted the virus with a much higher prevalence of underlying chronic disease, including obesity, diabetes, and hypertension,⁴ as well as known cardiovascular and pulmonary conditions. Such superimposed risk factors, especially in combination, increased their likelihood of getting severely ill from COVID.

MISGUIDED GOVERNMENTAL RESPONSES, MISINFORMATION, AND CONSTITUTIONAL RIGHTS

The US crisis was initially exacerbated by a delayed, dampened, downplayed response, which was compounded by antiscientific meddling and mishandling of those governmental regulatory agencies responsible for the country's countermeasures. Hydroxychloroquine was initially touted by some as a promising treatment for COVID—a claim that has been largely refuted.^{5,6} For varied reasons, leadership purposefully downplayed the coronavirus.⁷ Americans were told that the end of the virus was just around the corner or that it would magically vanish when it got warmer.

Corresponding author: Barry A. Franklin, PhD, Preventive Cardiology and Cardiac Rehabilitation, Beaumont Health and Wellness Center, 4949 Coolidge Highway, Royal Oak, MI 48073 (e-mail: Barry.Franklin@Beaumont.edu)

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Uncertainty abounded. The scientific and medical communities were faced with unprecedented challenges. Unfounded opinions, misinformation, and politicized viewpoints continue to run rampant, fueled by some in the media. Recently, I saw a demonstrator in New York carrying a bulletted sign that read: “Things that I trust more than the COVID vaccines.” It included “Flint Michigan tap water.” The facts, however, would suggest otherwise. According to numerous reports, the scientific evidence is overwhelming: in spite of reported reactions and some serious adverse events, COVID vaccines are generally safe and highly effective. Notwithstanding recent outbreaks of the Delta variant of COVID-19 even among fully vaccinated adults, Israel’s vaccination program, the most expansive on earth, has been successful in largely eradicating severe COVID-19 from the country.^{8,9}

During a July 2021 White House briefing, Centers for Disease Control and Prevention (CDC) Director Dr. Rochelle Walensky said that the current COVID-19 outbreak is becoming a “pandemic of the unvaccinated.” A data review by her agency suggests that 99.5% of the people who died from COVID-19 over the past 6 months were unvaccinated. US Surgeon General Dr. Vivek Murthy added that nearly every recent death due to the coronavirus could have been prevented. Murthy wrote in a 22-page advisory: “Health misinformation is a serious threat to public health. It can cause confusion, sow mistrust, harm people’s health, and undermine public health efforts. It’s one of several reasons why people are not getting vaccinated.”

Despite overwhelming evidence that masks block virus transmission and save lives, some have argued that they have a “constitutional right” not to wear them and that such mandates undermine American democratic principles. According to Professor Helena Rosenblatt, history scholar at the City University of New York, neither of these suppositions is valid.¹⁰ She further maintains that the core pillar of our government is to defend the lives of its citizens against all enemies—and that includes COVID. Moreover, not only do Americans *not* have the “right” to refuse masks, they have the responsibility to wear them!

HEALTH OF OUR NATION BEFORE THE PANDEMIC?

In 2018, the US spent approximately \$3.6 trillion on health care—a level of spending that makes our health care system alone the fifth largest economy in the world.¹¹ To put it in perspective, that year the entire US Department of Defense budget was \$574 billion. A 2015 Commonwealth Fund brief reported that the US had worse health outcomes and spent far more on health care than other high-income countries.

A landmark study noted that Americans, prior to the pandemic, already had a high prevalence of unhealthy lifestyles, risk factors, and chronic disease, as well as a shorter life expectancy compared with residents of all other high-income countries.¹² The analysis showed that adherence to five low-risk lifestyle factors (not smoking, body mass index 18.5 to 24.9 kg/m,² ≥ 30 minutes a day of moderate to

vigorous physical activity, moderate alcohol intake, healthy diet score) could prolong the life expectancy at age 50 years by up to 14.0 and 12.2 years for women and men, respectively. Interestingly, the most physically active cohorts of men and women demonstrated 7- to 8-year gains in life expectancy.¹² The investigators concluded that Americans could narrow the life-expectancy gap between the US and other industrialized countries by adopting a healthier lifestyle, and prevention should be a top priority for national health policy.

NEED FOR GREATER SELF-RESPONSIBILITY

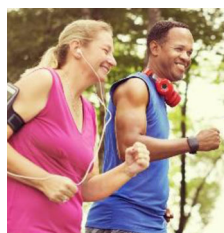
The cost of health care today in the US will soon approach 20% of the gross domestic product (\$1 out of every \$5 spent). It’s simply not sustainable! We need to move from what has been referred to as a “reactive sick care system,” where patients consider doctors, hospitals, and major medical centers only when they are ill, injured, sick, or require emergent care (e.g., acute myocardial infarction), to a more proactive health care model.¹³ Clearly, greater efforts are needed to better educate and incentivize far more Americans to prevent chronic diseases, which are responsible for *the largest proportion* of contemporary health care expenditures.

If we’ve learned anything during the COVID pandemic, it’s that “our greatest wealth is health.” In addition to targeted societal interventions to address existing population disparities, from a public health perspective, we can and must do more to help ourselves, rather than heavily relying on our doctors for *our* wellness and disease prevention initiatives. Today’s physicians are already overwhelmed by thousands of patient encounters each year—a dilemma that has been exacerbated by COVID. On average, physicians see 11 to 20 different patients each day; in extreme situations, it’s 50 to 60 or more patients daily! Think about it: Who is better positioned to identify, monitor, and favorably modify personal health metrics than the patient?

Failure to take responsibility for our own health represents the single most important factor affecting the prevention and treatment of chronic diseases—diseases that unequivocally exacerbate the life-threatening risks of COVID.⁴ Contemporary physicians can miraculously repair broken bones, literally halt heart attacks in progress, administer lifesaving medications, and counsel patients down the pathway to a healthier lifestyle. Prescribed cardioprotective medications to favorably modify existing risk factors can also be helpful in this regard. However, adherence is the patient’s responsibility! Perhaps self-help author Jim Rohn summed it up best when he said, “You can’t hire someone else to do your push-ups for you.” Without question, self-responsibility (e.g., meeting certain basic health metrics) will become a greater priority in the contemporary health care environment.¹⁴ For example, completing health habit surveys and/or serial risk factor profiles and attaining certain risk factor goals will be increasingly mandated by insurers and employers, orchestrated in part by financial and other incentives.

Table 1. Impact of lifestyle, risk factors, and pollution on chronic disease and COVID

- Among overweight/obese individuals, the health benefits of losing even 5% of body weight are well documented.¹⁵
- A Mediterranean diet, supplemented with extra-virgin olive oil or nuts, has been shown to reduce the incidence of major cardiovascular events in 'at risk' individuals by ~30%.¹⁶
- Cigarette smoking is responsible for 540,000 to 600,000 deaths each year. Moreover, on average, life expectancy is shortened by 10 to 12 years among lifelong smokers, as compared with those who never smoked.^{17,18}
- Chronic exposure to secondhand smoke increases the risk of heart disease by ~30%.¹⁹
- City- and country-wide smoking bans have invariably resulted in reduced population rates of cardiovascular events, especially among nonsmokers.^{20,21}
- Modest increases in physical activity and aerobic fitness confer significant reductions in chronic disease and all-cause mortality.²²
- Inactive/unfit individuals are at higher risk for complications during hospitalization and following emergent or elective surgical procedures.²³
- Consistently meeting physical activity guidelines is associated with a reduced likelihood for hospitalization, intensive care unit admission, and death among patients with COVID-19.²⁴
- Recently, researchers reported that aerobic fitness was inversely associated with the likelihood of hospitalization due to COVID-19.²⁵ Accordingly, the higher the fitness, the lower the risk of hospitalization.
- Environmental air pollution can exacerbate underlying cardiovascular and/or pulmonary disease, triggering complications that require hospitalization each year.²⁶
- Nearly half of all adverse health outcomes are determined by the behavioral choices people make on a day-to-day basis, including poor dietary selections, physical inactivity, cigarette smoking, and exposure to secondhand smoke.²⁷
- The healthiest, longest living populations in the world (e.g., Sardinians, Adventists, Okinawans) share five common characteristics: don't smoke; put family first; remain physically active every day; remain socially engaged; and eat lots of fruits, vegetables, and whole grains.²⁸



The bottom line? Markedly abnormal risk factors and unhealthy lifestyle habits are the forerunners of chronic disease. These need to be identified earlier and favorably modified. Consider their exacerbating impact on chronic disease and COVID (*Table 1*).^{15–28} Relative to COVID, increase physical activity²⁴ as well as cardiorespiratory fitness²⁵ and adhere to the public health and CDC guidelines, as summarized by the 4-W's in *Figure 1*. Exercise capacity should be progressively increased by using age-, sex-, and fitness-adjusted target intensities for training.²⁹ *Most importantly, embrace personal responsibility and get vaccinated!* The sooner we accept greater responsibility for our own health, well-being, and protection against viruses, the sooner the COVID nightmare will be over. Accordingly, when it comes to preventive health interventions, I invariably counsel patients to

embrace the 10 most empowering two-letter words: "If it is to be, it is up to me."

In closing, we need to proactively address the COVID crisis via the development of a national strategic plan that will propose solutions to these compounds and establish public health contingency plans. This should be orchestrated by the medical community in conjunction with those state and federal agencies that are responsible for coordinating the US coronavirus response. Additional objectives should include more equitably addressing the social determinants of health by reducing population subset disparities and decreasing the incidence/prevalence of unhealthy lifestyles, risk factors, underlying chronic disease, and associated health care costs, our number 1 societal expenditure. The critical role of heightened self-responsibility is apparent.

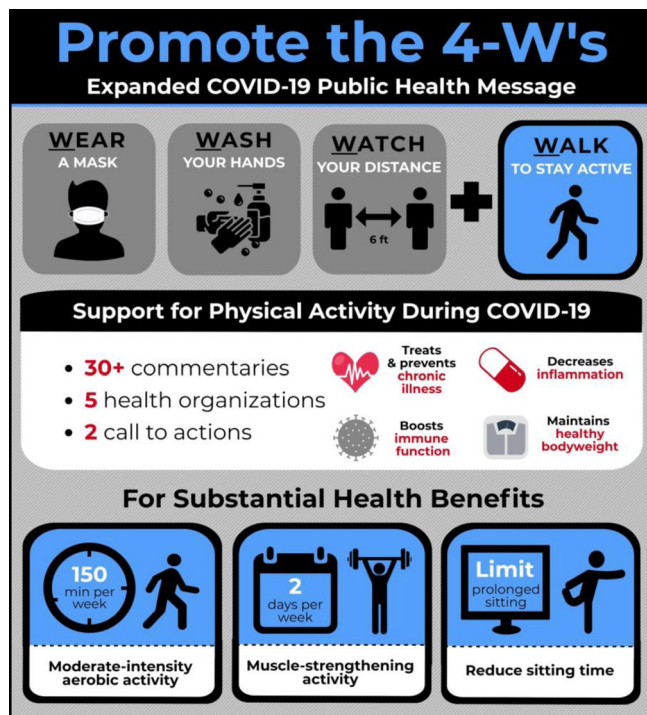


Figure 1. Infographic created by Isaac Wedig and Steve Elmer, PhD, Department of Kinesiology and Integrative Physiology at Michigan Tech University; used with permission.

Perhaps the late General Norman Schwarzkopf summed it up best when asked how he would respond to an enemy attack. “Counterattack,” he replied. When the enemy is COVID or other viral mutations, the strategy is no different. The scientific community’s accelerated development of safe and effective vaccines substantiates this approach. Now people just need to be responsible enough to take them.

1. Abrams EM, Szeffler SJ. COVID-19 and the impact of social determinants of health. *Lancet Respir Med*. 2020;8(7):659–661. doi:10.1016/S2213-2600(20)30234-4.
2. Azar KMJ, Shen Z, Romanelli RJ, et al. Disparities in outcomes among COVID-19 patients in a large health care system in California. *Health Aff (Millwood)*. 2020;39(7):1253–1262. doi:10.1377/hlthaff.2020.00598.
3. Das R. 40% of COVID-19 deaths in Michigan are African Americans. April 20, 2020. <https://www.wins.com/news/michigan/40-of-covid-19-deaths-in-michigan-are-african-americans>.
4. O’Hearn M, Liu J, Cudhea F, Micha R, Mozaffarian D. Coronavirus disease 2019 hospitalizations attributable to cardiometabolic conditions in the United States: a comparative risk assessment analysis. *J Am Heart Assoc*. 2021;10(5):e019259 doi:10.1161/JAHA.120.019259.
5. Abd-El Salam S, Esmail ES, Khalaf M, et al. Hydroxychloroquine in the treatment of COVID-19: a multicenter randomized controlled study. *Am J Trop Med Hyg*. 2020;103(4):1635–1639. doi:10.4269/ajtmh.20-0873.
6. Cavalcanti AB, Zampieri FG, Rosa RG, et al. Hydroxychloroquine with or without azithromycin in mild-to-moderate COVID-19. *N Engl J Med*. 2020;383(21):2041–2052. doi:10.1056/NEJMoa2019014.
7. Woodward B. *Rage*. New York: Simon & Schuster; 2020.
8. Shilo S, Rossman H, Segal E. Signals of hope: gauging the impact of a rapid national vaccination campaign. *Nat Rev Immunol*. 2021;21(4):198–199. doi:10.1038/s41577-021-00531-0.

9. Rossman H, Shilo S, Meir T, Gorfine M, Shalit U, Segal E. COVID-19 dynamics after a national immunization program in Israel. *Nat Med*. 2021;27(6):1055–1061. doi:10.1038/s41591-021-01337-2.
10. Rosenblatt H. No, there isn’t a constitutional right to not wear masks. *The Washington Post*, August 20, 2020. <https://www.washingtonpost.com/outlook/2020/08/20/no-there-isnt-constitutional-right-not-wear-masks>.
11. Hartman M, Martin AB, Benson J, Catlin A. National health care spending in 2018: growth driven by accelerations in Medicare and private insurance spending. *Health Aff (Millwood)*. 2020;39(1):8–17. doi:10.1377/hlthaff.2019.01451.
12. Li Y, Pan A, Wang DD, et al. Impact of healthy lifestyle factors on life expectancies in the US population. *Circulation*. 2018;138(4):345–355. doi:10.1161/CIRCULATIONAHA.117.032047.
13. Fani Marvasti F, Stafford RS. From sick care to health care—reengineering prevention into the U.S. system. *N Engl J Med*. 2012;367(10):889–891. doi:10.1056/NEJMp1206230.
14. Sandesara PB, Lambert CT, Gordon NF, et al. Cardiac rehabilitation and risk reduction: time to “rebrand and reinvigorate.” *J Am Coll Cardiol*. 2015;65(4):389–395. doi:10.1016/j.jacc.2014.10.059.
15. Blackburn G. Effect of degree of weight loss on health benefits. *Obes Res*. 1995;3(Suppl 2):211s–216s. doi: 10.1002/j.1550-8528.1995.tb00466.x.
16. Estruch R, Ros E, Salas-Salvadó J, et al. Primary prevention of cardiovascular disease with a Mediterranean diet supplemented with extra-virgin olive oil or nuts. *N Engl J Med*. 2018;378(25):e34. doi:10.1056/NEJMoa1800389.
17. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years’ observations on male British doctors. *BMJ*. 2004;328(7455):1519 doi:10.1136/bmj.38142.554479.AE.
18. Jha P, Ramasundaramhettige C, Landsman V, et al. 21st-century hazards of smoking and benefits of cessation in the United States. *N Engl J Med*. 2013;368(4):341–350. doi:10.1056/NEJMsa1211128.
19. Barnoya J, Glantz SA. Cardiovascular effects of secondhand smoke: nearly as large as smoking. *Circulation*. 2005;111(20):2684–2698. doi:10.1161/CIRCULATIONAHA.104.492215.
20. Pell JP, Haw S, Cobbe S, et al. Smoke-free legislation and hospitalizations for acute coronary syndrome. *N Engl J Med*. 2008;359(5):482–491. doi:10.1056/NEJMsa0706740.
21. Schmucker J, Wienbergen H, Seide S, et al. Smoking ban in public areas is associated with a reduced incidence of hospital admissions due to ST-elevation myocardial infarctions in non-smokers. Results from the Bremen STEMI Registry. *Eur J Prev Cardiol*. 2014;21(9):1180–1186. doi:10.1177/2047487313483610.
22. Kokkinos P, Narayan P, Myers J, Franklin B. Cardiorespiratory fitness and the incidence of chronic disease. *J Clin Exercise Physiol*. 2018;7(2):37–45. doi:10.31189/2165-6193-7.2.37.
23. Ross R, Blair SN, Arena R, et al. Importance of assessing cardiorespiratory fitness in clinical practice: a case for fitness as a clinical vital sign: a scientific statement from the American Heart Association. *Circulation*. 2016;134(24):e653–e699. doi:10.1161/CIR.0000000000000461.
24. Sallis R, Young DR, Tartof SY, et al. Physical inactivity is associated with a higher risk for severe COVID-19 outcomes: a study in 48 440 adult patients. *Br J Sports Med*. 2021. doi:10.1136/bjsports-2021-104080.
25. Brawner CA, Ehrman JK, Bole S, et al. Inverse relationship of maximal exercise capacity to hospitalization secondary to coronavirus disease 2019. *Mayo Clin Proc*. 2021;96(1):32–39. doi:10.1016/j.mayocp.2020.10.003.
26. Franklin BA, Brook R, Pope CA III. Air pollution and cardiovascular disease. *Curr Probl Cardiol*. 2015;40(5):207–238. doi:10.1016/j.cpcardiol.2015.01.003.
27. Schroeder SA. Shattuck Lecture. We can do better—improving the health of the American people. *N Engl J Med*. 2007;357(12):1221–1228. doi:10.1056/NEJMsa073350.
28. Buettner D. The secrets of living longer. *National Geog*. 2005;208(5):2–27.
29. Franklin BA, Arena R, Kaminsky LA, Peterman JE, Kokkinos P, Myers J. Maximizing the cardioprotective benefits of exercise with age-, sex-, and fitness-adjusted target intensities for training. *Eur J Prev Cardiol*. 2021.